

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-24 (Cancelled).

Claim 25 (New): A method for depositing titania, or titania-containing as thin films

on a substrate, the method comprising:

using an atmospheric pressure glow discharge plasma as a major source of reaction to improve film properties and film growth rates, when the substrate is heated at a temperature below 250°C,

introducing a reactive titania CVD precursor which has been pre-vaporised into the introduced gas flow into a gas flowing through a coating region.

Claim 26 (New): A method according to claim 25, wherein a post treatment of the coating with an atmospheric glow discharge plasma modifies the film properties and structure.

Claim 27 (New): A method according to claim 26, wherein the glow discharge post treatment modifies the film stoichiometry allowing control of film properties.

Claim 28 (New): A method according to claim 29, wherein a laminar flow is introduced into and through the coating region.

Claim 29 (New): A method according to claim 25, wherein an extraction system is employed to control gas flow through the coating region which supports controlled flow.

**Claim 30 (New):** A method according to claim 25, wherein a thermal control system is designed into the coating region to maintain the substrate temperature at a desired level, said thermal control system achieved by a gas or water or liquid coolant based cooling, or combinations thereof.

**Claim 31 (New):** A method according to claim 30, wherein the thermal control system is configured to cool the coating region to reduce unwanted side reactions.

**Claim 32 (New):** A method according to claim 29, wherein the reactive titania CVD precursor which is introduced in the coating region is an alkoxide of titanium or titanium tetrachloride.

**Claim 33 (New):** A method according to claim 29, wherein films can be deposited with a uniformity of at least +/-20% and preferably a uniformity of at least +/-10% and more preferably better than +/-5%.

**Claim 34 (New):** A method according to claim 25, used to build up a thicker layer or layers of different composition by arranging sequential coating regions along a direction of movement of the substrate.

**Claim 35 (New):** A method according to claim 25, used in combination with a different coating method.

**Claim 36 (New):** A method according to claim 25, wherein the glow discharge plasma is generated, between electrodes, by a low frequency source in which the frequency is below 100KHz and preferably below 30Khz.

**Claim 37 (New):** A method according to claim 36, wherein the metal electrodes are selected from a material that reduces heat generation.

**Claim 38 (New):** A method according to claim 36, wherein the electrodes are made of brass.

**Claim 39 (New):** A method according to claim 25, wherein power density of the plasma is below  $5 \text{ Wcm}^{-2}$  and preferably below  $1\text{Wcm}^{-2}$  and more preferably below  $0.5 \text{ Wcm}^{-2}$ .

**Claim 40 (New):** A method according to claim 25, wherein peak growth rate is at least 10 nm per second, and up to several tens of nm per second, over 100nm per second.

**Claim 41 (New):** A method according to claim 25, wherein the film can be deposited on preformed and/or thermally toughened substrates.

**Claim 42 (New):** A method according to claim 25, wherein the film can be deposited on temperature sensitive substrates including thermally preformed substrates and plastic substrate materials.

**Claim 43 (New):** A method according to claim 25, wherein a level of water and oxygen are controlled to achieve target growth rates and to control unwanted side reactions, the oxygen

level being below 5% and more preferably below 1%, the water vapour levels being controlled  
preferably below 1% and more preferably below 0.1

Claim 44 (New): A method according to claim 43, suitable for coating moving  
substrates of a continuous film or sheet, or a series of substrates supplied semi-continuously.

Claim 45 (New): A method according to claim 25, wherein one or more gas flushing  
zones is used to allow introduction, and removal, of the substrates while maintaining integrity of  
the coating region gas composition.

Claim 46 (New): A substrate obtained by a method according to claim 25, wherein the  
film is photo-active, demonstrated by its ability to destroy organic materials on the surface and/or  
to modify surface energy on irradiation with UV or visible light.

Claim 47 (New): A substrate according to claim 46, wherein the film has a degree of  
crystallinity.

Claim 48 (New): A substrate according to claim 46, wherein the deposited film has an  
optical quality suitable for use on substrates required to be substantially transparent to the human  
eye and to be looked through.